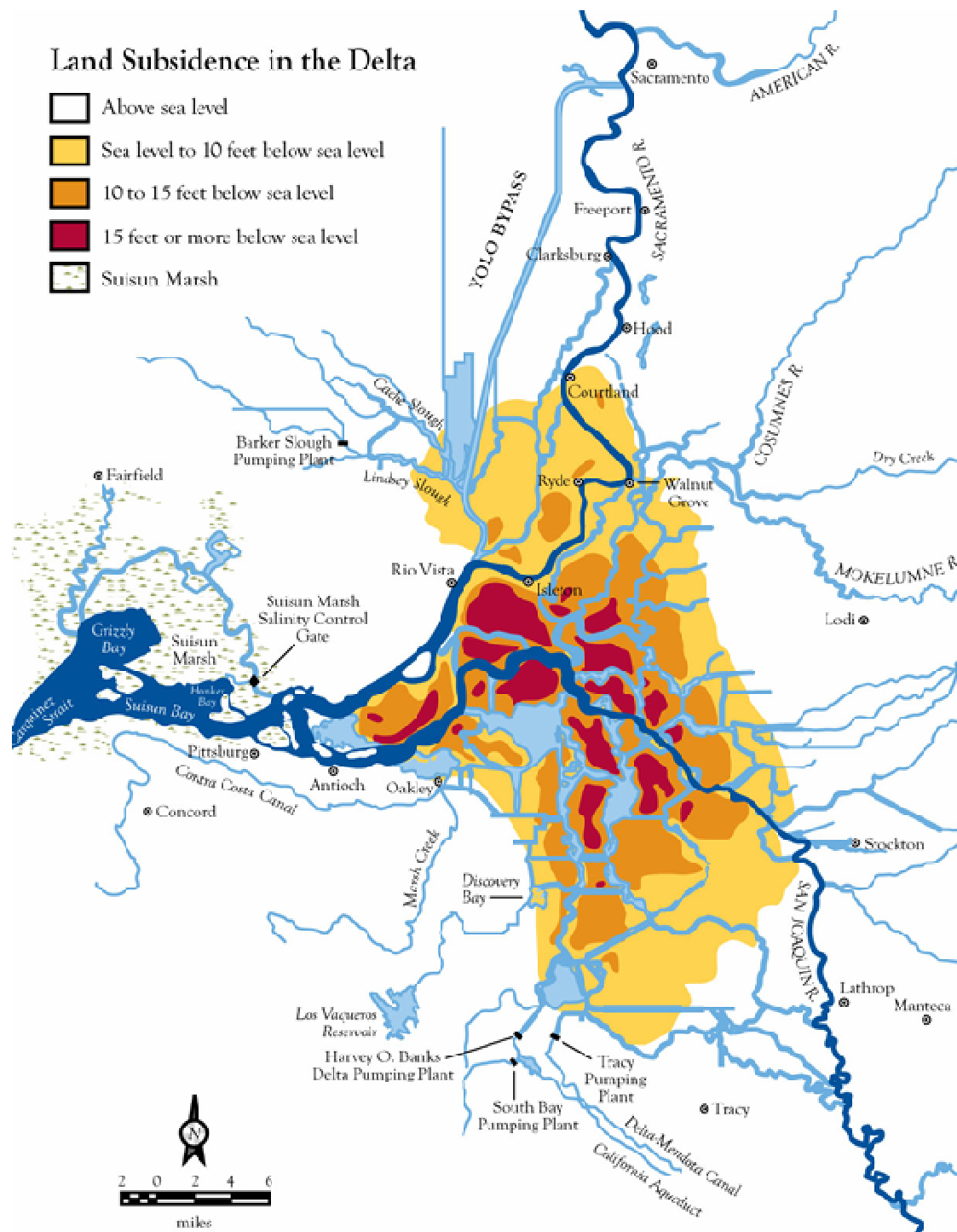


**UC Davis' CALVIN model view  
of California's water system**

## Land Subsidence in the Delta

- Above sea level
- Sea level to 10 feet below sea level
- 10 to 15 feet below sea level
- 15 feet or more below sea level
- Suisun Marsh



**Estimated 1995-2005 Average Consumptive Use**  
(thousand acre-feet/year)



<b>Demand Area</b>	<b>Agriculture</b>	<b>Urban</b>	<b>Environment*</b>	<b>Total</b>
<b>Unimpaired Delta outflow</b>				<b>40,393</b>
<b>Net Delta Outflow</b>	<b>-</b>	<b>-</b>	<b>22,553</b>	<b>22,553</b>
<i><b>Total Diversions</b></i>	<i><b>14,090</b></i>	<i><b>3,235</b></i>	<i><b>415</b></i>	<i><b>17,740</b></i>
Upstream diversions	9,540	1,712	138	<b>11,390</b>
Delta diversions	4,550	1,523	277	<b>6,350</b>
<i><b>In-Delta</b></i>	<i><b>769</b></i>	<i><b>0</b></i>	<i><b>0</b></i>	<i><b>769</b></i>
Upstream diversions	0	0	0	<b>0</b>
Delta diversions	769	-	-	<b>769</b>
<i><b>North of Delta</b></i>	<i><b>6,000</b></i>	<i><b>562</b></i>	<i><b>138</b></i>	<i><b>6,700</b></i>
Upstream diversions	6,000	520	138	<b>6,658</b>
Delta diversions	0	42	0	<b>42</b>
<i><b>South of Delta</b></i>	<i><b>7,321</b></i>	<i><b>1,960</b></i>	<i><b>277</b></i>	<i><b>9,558</b></i>
Upstream diversions	3,540	600	-	<b>4,140</b>
Delta diversions	3,781	1,360	277	<b>5,418</b>
<i><b>West of Delta</b></i>	<i><b>0</b></i>	<i><b>713</b></i>	<i><b>0</b></i>	<i><b>713</b></i>
Upstream diversions	0	592	0	<b>592</b>
Delta diversions	0	121	0	<b>121</b>

# Major Water Problems of California



- 1) Klamath River system – Salmon, hydropower, water diversions to Central Valley
- 2) Sacramento Valley – flood management, conjunctive use
- 3) Mountain communities – local urban water supplies
- 4) The Delta – ecosystem, water exports, local water supply and land use – Main Hub
- 5) Bay Area – water supply, drinking water treatment
- 6) San Joaquin River – water supplies, salt, floods
- 7) Tulare Basin – water supply, salt, groundwater overdraft – 2<sup>nd</sup> Hub
- 8) Southern California – water supply, drinking water treatment
- 9) Salton Sea – Pacific flyway, urbanization, salt
- 10) Colorado River – salt, ecosystems, Pacific flyway, Mexico treaties
- 11) Salinas Valley – sea water intrusion – only weakly connected

## Some Lessons



- 1) Highly connected and physically flexible system.
- 2) We all benefit and depend on a common water system.
- 3) There are many ways to provide water supply.
- 4) Storage capacities: about 40 million acre-ft surface water  
about 150 – 400 million acre-ft groundwater
- 5) Of traditional infrastructure, conveyance is typically much more useful if water operations are smart.
- 6) Integrated portfolio solutions of traditional and new options tend to be more cost-effective and robust.
- 7) Need integrated technical and scientific work to support integrated water management for the future.